

# Miniature Earthmover

**In 1995**, International Machinery Corporation (IMC), Mt. Juliet, Tennessee completed the research and development phase of its first product—a miniaturized, remotely-controlled earthmover—and embarked on preparations to begin producing the machine late in 1996. The product is a 1/8 scale fully functional replica of the world's largest earthmover, the 220,000-pound Caterpillar® D11N Track-type Tractor. Caterpillar Inc., Peoria, Illinois granted IMC trademark product approval and a worldwide license to manufacture and market 1/8 scale replicas of Caterpillar products.

The Cat® D11N weighs only 340 pounds, has miniature hydraulic and transmission systems, and is powered by an IMC-designed seven horsepower, V4 four-stroke cycle engine which, says IMC, is the world's first miniature industrial internal combustion engine. The 45-pound engine, which will power all IMC products, is smaller, quieter and has less vibration than single cylinder engines of comparable power output.

IMC contemplates marketing the miniature earthmover to users of heavy equipment, particularly Cat equipment, such as fleet owners/contractors and operators of equipment for mining, construction and demolition work. The company sees broad potential for sales of the engine to Original Equipment Manufacturers for such applications as boat propulsion, light landscaping machinery, snow grooming vehicles, powered scale model vehicles, go carts and transportation for the handicapped.

A market area of particular interest to IMC is the special equipment category wherein the vehicle's small size, miniaturized water-cooled engine and remote control capability permit its use in confined spaces and in environments considered hazardous to humans. Prospective customers in this category include the military services and other federal agencies, law enforcement organizations, and waste management firms.

The initial products are operated by radio remote control. However, the company envisions large-scale export sales of the 1/8 scale Cat D11N and subsequent products; because of varying restrictions on radio frequency use among foreign countries, IMC is developing infrared remote control capabilities with technical assistance from NASA under multiple Technology Transfer Agreements; Marshall Space Flight Center is the cognizant NASA organization.

IMC plans to build upon the 1/8 scale Cat D11N experience by introducing other innovative systems, both Cat machine replicas and non-Cat products. Cat-licensed replicas planned for early introduction include the 994 Front-Wheel Loader and the 793 Off-Road Mining Truck. Additionally, IMC has preliminary designs for eight non-Cat products for military use in weapon systems, surveillance systems and explosive ordnance disposal.

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